

## AMENDMENTS TO THE CLAIMS

1.(Cancelled)

2.(Cancelled)

3.(Previously amended) Free radical emulsion polymerization method according to claim 13, wherein said dimer is selected from the group consisting of  $\alpha$ -methyl vinyl compounds and  $\alpha$ -ethyl vinyl compounds.

4.(Previously Amended) Free radical emulsion polymerization method according to claim 14, wherein said dimer is selected from the group consisting of  $\alpha$ -methyl vinyl compounds and  $\alpha$ -ethyl vinyl compounds.

5.(Previously Amended) Free radical emulsion polymerization method according to claim 13, wherein said dimer is selected from the group consisting of dimers or cross-dimers or  $\alpha$ -methylstyrene, methyl methacrylate, hydroxy ethylacrylate, benzyl methacrylate, allyl methacrylate, methacrylonitrile, glycidyl methacrylate, methacrylic acid, tert.-butyl methacrylate, isocyanatoethyl methacrylate, meta-isopopenyl- $\alpha,\alpha$ -dimethyl isocyanate (TMI),  $\omega$ -sulfoxyalkyl methacrylates and alkali salts thereof.

6.(Canceled)

7.(Canceled)

8.(Canceled)

9.(Canceled)

10.(Canceled)

11.(Canceled)

12.(Canceled)

13.(Currently Amended) Free radical emulsion polymerization method for forming latex particles of a monomer or monomer mixture in a water-based reaction in the presence of a chain transfer agent and of a surfactant, wherein said surfactant is present in a concentration below twice its critical micelle concentration of at least 0.5%, by weight, to and that said chain transfer agent is a dimmer wherein said latex particle has an average particle size of less than 100 nm.

14.(Previously Added) Free radical emulsion polymerization method according to claim 13, wherein said surfactant is a non-ionic surfactant, present in a concentration versus said monomer or monomer mixture of from 5 up to 25 % by weight.

15.(Previously Added) Free radical emulsion polymerization method according to claim 13, wherein said surfactant is an anionic surfactant, present in a concentration versus said monomer or monomer mixture of from 0.05 up to 10 % by weight.

16.(Previously Added) Free radical emulsion polymerization method according to claim 13, wherein said surfactant is an anionic surfactant, present in a concentration versus said monomer or monomer mixture of from 0.05 up to 1%, by weight.

- 17.(Previously Added) Free radical emulsion polymerization method according to claim 15, wherein said dimer is a compound selected from the group consisting of  $\alpha$ -methyl vinyl compounds and  $\alpha$ -ethyl vinyl compounds.
- 18.(Previously Added) Free radical emulsion polymerization method according to claim 16, wherein said dimer is a compound selected from the group consisting of  $\alpha$ -methyl vinyl compounds and  $\alpha$ -ethyl vinyl compounds.
- 19.(Previously Added) Free radical emulsion polymerization method according to claim 14, wherein said dimer is a compound selected from the group consisting of dimers or cross-dimers of  $\alpha$ -methylstyrene, methyl methacrylate, hydroxy ethylacrylate, benzyl methacrylate, allyl methacrylate, methacrylonitrile, glycidyl methacrylate, methacrylic acid, tert.-butyl methacrylate, isocyanatoethyl methacrylate, meta-isopopenyl- $\alpha,\alpha$ -dimethyl isocyanate (TMI),  $\omega$ -sulfoxyalkyl methacrylates and alkali salts thereof.
- 20.(Previously Added) Free radical emulsion polymerization method according to claim 15, wherein said dimer is a compound selected from the group consisting of dimers or cross-dimers or  $\alpha$ -methylstyrene, methyl methacrylate, hydroxy ethylacrylate, benzyl methacrylate, allyl methacrylate, methacrylonitrile, glycidyl methacrylate, methacrylic acid, tert.-butyl methacrylate, isocyanatoethyl methacrylate, meta-isopopenyl- $\alpha,\alpha$ -dimethyl isocyanate (TMI),  $\omega$ -sulfoxyalkyl methacrylates and alkali salts thereof.

21.(Previously Added) Free radical emulsion polymerization method according to claim 16, wherein said dimer is a compound selected from the group consisting of dimers or cross-dimers or  $\alpha$ -methylstyrene, methyl methacrylate, hydroxy ethylacrylate, benzyl methacrylate, allyl methacrylate, methacrylonitrile, glycidyl methacrylate, methacrylic acid, tert.-butyl methacrylate, isocyanatoethyl methacrylate, meta-isopopenyl- $\alpha,\alpha$ -dimethyl isocyanate (TMI),  $\omega$ -sulfoxyalkyl methacrylates and alkali salts thereof.

22.(Currently Amended) Free radical emulsion polymerization method according to claim 13, wherein said monomers are selected from the group consisting of ~~derivatives of~~ styrene derivatives, methacrylates, acrylates, methacrylamides, acrylamides, maleimides, vinyl ethers and vinyl esters.

23.(Previously Added) Free radical emulsion polymerization method according to claim 22, wherein said derivatives are selected from the group consisting of para-methylstyrene, tert.-butylstyrene, methylmethacrylate, ethylmethacrylate, butylmethacrylate, glycidylmethacrylate, hydroxyethylmethacrylate, a-methylstyrene, ethylacrylate, butylacrylate, vinylacetate, vinyl versatate, butadiene, isoprene, acrylonitrile, methacrylonitrile, sulfoethyl methacrylate and its alkali salts, acrylic acid, methacrylic acid, tert-butyl acrylamide, AMPS, N-isopropylacrylamide, itaconic acid, maleic acid, maleic anhydride, vinylidene chloride, isopropylmethacrylate, dialkyl itaconate, acrylonitrile, methacrylonitrile and vinyl chloride.

24.(Previously Added) Free radical emulsion polymerization method according to claim 14, wherein said non-ionic surfactants are selected from the group consisting of alcohol ethoxylates, alkylphenol ethoxylates, polyethylene oxide/polyethylene oxide block copolymers, polyvinyl alcohol, polyvinyl pyrrolidone, sorbitan fatty acid esters or sorbitan ester ethoxylates.

25.(Previously Added) Free radical emulsion polymerization method according to claim 15, wherein said anionic surfactants are selected from the group consisting of fatty alcohol sulphates, alkylphenol sulphates, fatty alcohol ether sulphates, fatty alcohol ether sulphates, alkylphenol ether sulphates, alkylbenzene sulphonic acid, alkyl ether carboxylic acid and salts thereof, alkyl sulphosuccinates, alkyl sulphosuccinamates, phosphate esters or  $\alpha$ -olefin sulphonates.

26.(New) Free radical emulsion polymerization method for forming latex particles of a monomer or monomer mixture in a water-based reaction in the presence of a chain transfer agent and of a surfactant, wherein said surfactant is present in a concentration below twice its critical micelle concentration of at least 0.5%, by weight, to and that said chain transfer agent is a cobalt complex.

27.(New) Free radical emulsion polymerization method according to claim 26, wherein said surfactant is a non-ionic surfactant, present in a concentration versus said monomer or monomer mixture of from 5 up to 25 % by weight.

- 28.(New) Free radical emulsion polymerization method according to claim 27, wherein said non-ionic surfactants are selected from the group consisting of alcohol ethoxylates, alkylphenol ethoxylates, polyethylene oxide/polyethylene oxide block copolymers, polyvinyl alcohol, polyvinyl pyrrolidone, sorbitan fatty acid esters or sorbitan ester ethoxylates.
- 29.(New) Free radical emulsion polymerization method according to claim 26, wherein said surfactant is an anionic surfactant, present in a concentration versus said monomer or monomer mixture of from 0.05 up to 10 % by weight.
- 30.(New) Free radical emulsion polymerization method according to claim 29, wherein said anionic surfactants are selected from the group consisting of fatty alcohol sulphates, alkylphenol sulphates, fatty alcohol ether sulphates, fatty alcohol ether sulphates, alkylphenol ether sulphates, alkylbenzene sulphonic acid, alkyl ether carboxylic acid and salts thereof, alkyl sulphosuccinates, alkyl sulphosuccinamates, phosphate esters or  $\alpha$ -olefin sulphonates.
- 31.(New) Free radical emulsion polymerization method according to claim 26, wherein said surfactant is an anionic surfactant, present in a concentration versus said monomer or monomer mixture of from 0.05 up to 1%, by weight.

32.(New) Free radical emulsion polymerization method according to claim 26, wherein said monomers are selected from the group consisting of styrene derivatives, methacrylates, acrylates, methacrylamides, acrylamides, maleimides, vinyl ethers and vinyl esters.

33.(New) Free radical emulsion polymerization method according to claim 32, wherein said derivatives are selected from the group consisting of para-methylstyrene, tert.-butylstyrene, methylmethacrylate, ethylmethacrylate, butylmethacrylate, glycidylmethacrylate, hydroxyethylmethacrylate, a-methylstyrene, ethylacrylate, butylacrylate, vinylacetate, vinyl versatate, butadiene, isoprene, acrylonitrile, methacrylonitrile, sulfoethyl methacrylate and its alkali salts, acrylic acid, methacrylic acid, tert-butyl acrylamide, AMPS, N-isopropylacrylamide, itaconic acid, maleic acid, maleic anhydride, vinylidene chloride, isopropylmethacrylate, dialkyl itaconate, acrylonitrile, methacrylonitrile and vinyl chloride.

34.(New) Free radical emulsion polymerization method according to claim 26, wherein said cobalt complex is a cobalt II or cobalt III complex.

35.(New) Free radical emulsion polymerization method according to claim 34, wherein said cobalt complex is selected from cobalt II diphenyl complex;  
bis(borondifluorodiphenylglyoximate) cobaltate II complex;  
bis(borondifluorodimethylglyoximate) cobaltate II complex; [bis[m-(2,3-butanedione dioximato)(2-)O,O'tetraflorodiborato(2-propyl)N,N',N'',N'''](2-propyl)Co(III)]] or benzylbis(dimethylglyximate)(pyridine)cobalt III.